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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/510,068	10/04/2004	Stanley F Barnett	21075YP	5599

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MERCK AND CO., INC
P O BOX 2000
RAHWAY, NJ 07065-0907

EXAMINER	
SUTTON, DARRYL C	

ART UNIT	PAPER NUMBER
1614	

MAIL DATE	DELIVERY MODE
12/13/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/510,068	BARNETT ET AL.	
	Examiner	Art Unit	
	Darryl C. Sutton	1614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 October 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,7,11,15 and 38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,7,11,15 and 38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/10/2004*.
4) ☒ Interview Summary (PTO-413) Paper No(s)/Mail Date. *11/14/2007* .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Applicant's election of Group 6, and election of species, inhibitor of Akt1 and Akt2 which is dependent on PH domain, along with claims 1-4, 7, 11, 15 and 38 in the reply filed on 10/11/2007 is acknowledged. In addition, during a telephone conversation with Matthew Leff on 11/14/2007 an election of species was made of a single species of inhibitor of Akt1 and Akt2 which is dependent on PH domain, 2-(2-aminoprop-2-ylphenyl)-3-phenylquinazoline. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Claims 19, 23, 27 and 31 are cancelled.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-4, 7, 11, 15 and 38 are rejected under 35 U.S.C. 112, first paragraph, because the specification, fails to reasonably provide enablement for the treatment of cancers with a selective inhibitor of Akt1 and Akt2 which is dependent on PH domain such as the elected species, 2-(2-aminoprop-2-ylphenyl)-3-phenylquinazoline. The specification does not enable any person

skilled in the art to which it pertains, or with which it is most nearly connected, to practice the invention commensurate in scope with these claims.

In this regard, the application disclosure and claims have been compared per the factors indicated in the decision In re Wands, 8 USPQ2d 1400 (Fed. Cir., 1988) as to undue experimentation. The factors include:

1) the nature of the invention;
2) the breadth of the claims;
3) the predictability or unpredictability of the art;
4) the amount of direction or guidance presented;
5) the presence or absence of working examples;
6) the quantity of experimentation necessary;
7) the state of the prior art; and,
8) the relative skill of those skilled in the art.

The relevant factors are addressed below on the basis of comparison of the disclosure, the claims and the state of the prior art in the assessment of undue experimentation.

Factors 1 and 2: The claimed invention is drawn to a method of treating cancer in a mammal comprising administering to said mammal amounts of a selective inhibitor of Akt1 and Akt2 which is dependent on PH domain, 2-(2-aminoprop-2-ylphenyl)-3-phenylquinazoline (claims 1-4, 7, 11, 15 and 38),

Factors 3 and 7: In particular, one skilled in the art could not practice the presently claimed subject matter without undue experimentation because the artisan would not accept on its face that the treatment of cancers in general, could be effectively achieved by the administration of the claimed active agent. Based on the state of the art, as discussed below, the artisan would have only

accepted that the treatment of specific types of cancer could be achieved, rather than that such an agent could have been used to treat any known cancer.

As set forth in In re Marzocchi et al., 169 USPQ 367 (CCPA 1971):

"[A] [s]pecification disclosure which contains teaching of manner and process of making and using the invention in terms corresponding to the scope to those used in describing and defining subject matter sought to be patented must be taken as in compliance with the enabling requirement of first paragraph of 35 U.S.C. 112 unless there is reason to doubt the objective truth of statements contained therein which must be relied on for enabling support; assuming that sufficient reasons for such doubt exists, a rejection for failure to teach how to make and/or use will be proper on that basis, such a rejection can be overcome by suitable proofs indicating that teaching contained in the specification is truly enabling."

The present claims circumscribe a method of treating cancer with a selective inhibitor of Akt1 and Akt2 which is dependent on PH domain, 2-(2-aminoprop-2-ylphenyl)-3-phenylquinazoline. That is, in order to be enabled to practice the present invention, the skilled artisan would have to accept that by administering the presently claimed active agent, a representative set of cancers could be treated. However, such a situation is sufficiently unusual. Data or a reasonable mechanism of action would need to be shown in order to establish which specific types of cancer have sensitivity to such a composition and how such cancers could be effectively treated through the administration of the claimed active agent. Because the specification fails to direct the skilled artisan

as to which cancers are known to be sensitive to such a composition or how one would even go about determining the subset of cancers that would have been reasonably expected to have such a sensitivity, especially in consideration of the highly complex nature of cancer, the specification, which lacks an objective showing of which cancers could be effectively treated using the claimed combination of active agents, is viewed as lacking an enabling disclosure of the same.

In light of the state of the art regarding cancer therapy, which is highly complex and highly unpredictable, the present disclosure fails to provide adequate disclosure directing the skilled artisan to the particular types of cancers that may be effectively treated using the claimed active agents. In fact, Applicant's related disclosure supports the treatment of any cancer type known in the art.

Here, the objective truth that cancer of any type may be treated is doubted because, while the state of the art of cancer treatment is well developed with regard to the treatment of specific cancer types (see Rubin et al., "Principles of Cancer Treatment: Management of Cancer Cases." ACP Medicine Online, http://www.medscape.com/viewarticle/534498), the state of the art with regard to treating or preventing cancer in general is grossly underdeveloped.

In this regard, Rubin et al. is cited. In particular, there is no known anticancer agent or combination of anticancer agents that is effective against treating all cancer types, nor is there any known anticancer agent or combination

of agents that is effective against inhibiting the growth of any type of cancer cell. The Rubin reference clearly shows that for the various known cancer types, there is not one specific chemotherapeutic agent or combination thereof that is effective at treating cancer or inhibiting the growth of cancer cells for each and every type of cancer (see Treatment, pp 2-3.).

Given that there was not known any specific agent or combination of agents effective to treat all known types of cancer, one of ordinary skill in the art would not accept on its face Applicant's statement that such an objective could be achieved in any cancer type. The artisan would have required sufficient direction as to which specific types of cancer could be effectively treated with the presently claimed combination of active agents and, further, how the artisan could predict what particular types of cancer would actually show sensitivity to the presently claimed composition such that the artisan would have been imbued with at least a reasonable expectation of success in treating the cancer. Such success would not have been reasonably expected for all cancer types given the highly complex and variable nature of all cancers known in the art and that the treatment of all known cancer types would have been an outcome not reasonably expected by one of ordinary skill in the art. To the artisan, the concept of a single agent, or even a combination of agents, that is effective to treat all known types of cancer would have been unique and, thus, met with a great deal of skepticism.

Factor 4: Applicant has merely disclosed that by administering a selective inhibitor of Akt1 and Akt2 which is dependent on PH domain, 2-(2-aminoprop-2-ylphenyl)-3-phenylquinazoline, one may treat cancer (page 1, lines 9-10, page 4,

lines 5-8). Based on the discussion in Section 3 above, however, such disclosure clearly is not adequate direction or guidance as to how the proposed agents can be employed to accomplish such objectives in a predictable manner.

Factor 5: The specification page 153-154 provides descriptions and scientific evidence demonstrating that the use of a selective inhibitor of Akt1 and Akt2 which is dependent on PH domain, 2-(2-aminoprop-2-ylphenyl)-3-phenylquinazoline inhibiting Akt1 and Akt2. Such data, however, is not commensurate in scope with the claimed subject matter. While the present claims encompass the treatment of a cancer of any known type by administering 2-(2-aminoprop-2-ylphenyl)-3-phenylquinazoline, Applicant's data establishes that the administration of this compound has an effect on the inhibition of Akt1 and Akt2 which is dependent on PH domain. However, no data or reasonable scientific basis for extrapolating such results to the larger genus of "cancer" as a whole has been provided that shows the claimed composition is capable of definitively effecting a synergistic effect in the treatment of any known type of cancer. The applicant's data is *in vitro* data and would not reasonably be expected to have similar results *in vivo*, since treating cancer in a biological organism, i.e. mammal or human, is much more complex than *in vitro* inhibition Akt1 and Akt2 in cells.

The Examiner acknowledges that the Office does not require the presence of working examples to be present in the disclosure of the invention (see MPEP §2164.02). However, in light of the state of the art, which recognizes the unpredictable nature of human cancer, there is no apparent disclosure to support

the contention that the use of the claim specified active agents could actually effectively treat a cancer of any known type by simply administering, by any method, an amount of the claimed active agent, since the present specification fails to enable one of ordinary skill in the art to practice the entirety of the presently claimed invention.

Factor 6: The burden of enabling the treatment of all types of human cancer is much greater than that of enabling the treatment of a specific, discrete group of cancers known to, or with a reasonable basis for concluding that they would, be responsive to such a treatment. Since the present specification would not enable the skilled artisan to treat any type of cancer known in the art, a clear burden of undue experimentation would be placed upon the skilled artisan in order to practice the full scope of the presently claimed invention.

Factor 8: In view of the discussion of each of the preceding seven factors, the level of skill in this art is high and is at least that of a medical doctor with several years of experience in the art.

Summary

As the cited art and discussion of the above 8 factors establish, practicing the claimed method in the manner disclosed by Applicant would not imbue the skilled artisan with a reasonable expectation that treatment of cancer could be achieved with the presently claimed agent. In order to actually achieve such an objective, it is clear from the discussion above that the skilled artisan could not

rely on Applicant's disclosure as required by 35 U.S.C. § 112, first paragraph. Given that the art fails to recognize, and Applicant has failed to demonstrate, via direct evidence or sound reasoning, that all types of human cancer could actually be treated with the presently claimed agent, the skilled artisan would be faced with the impermissible burden of undue experimentation in order to practice this embodiment of the claimed invention. Accordingly, claims 1-4, 7, 11, 15 and 38 are deemed properly rejected.

No claims are allowed.

Conclusion

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Darryl C. Sutton whose telephone number is

(571)270-3286. The examiner can normally be reached on M-Th from 7:30AM to 5:00PM EST or on Fr from 7:30AM to 4:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ardin Marschel, can be reached at (571)-272-0718. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Ardin H Marschel 12/8/07

ARDIN H. MARSCHEL
SUPERVISORY PATENT EXAMINER

DCS